CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.14/RN/CSR-3/797e/CEMENT/2014-15 Date: 26.03.2015

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer**, T. Dasarahalli Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. R. Nagaraj,** No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.
*NAME OF THE WORK	:	Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
*REFERENCE	:	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	24.03.2015
PERIOD OF TESTING	:	24.03.2015 to 26.03.2015

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	155 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	490 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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Chief Executive Officer

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-3/797e/SAND-Gradation/2014-15 : 26.03.2015

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. R. Nagaraj,**
No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.

*** Name of Work** : Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 24.03.2015

Date of Testing : 26.03.2015

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	92.50	90-100	90-100	90-100	95-100
2.36	73.30	60-95	75-100	85-100	95-100
1.18	52.70	30-70	55-90	75-100	90-100
600 Micron	23.70	15-34	35-59	60-79	80-100
300 Micron	11.70	5-20	8-30	12-40	15-50
150 Micron	5.20	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-3/797e/AGG/GR/2014-15 : 26.03.2015

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. R. Nagaraj,**
No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.

*** Name of Work** : Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm)

Sample Received on : 24.03.2015

Date of Testing : 26.03.2015

Total Wt. of Aggregates in gms= **10000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	97.45	95-100	85-100
20	44.45	30-70	0-20
10	22.45	10-35	0-5
4.75	3.45	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-3/797e/CC Solid Block/2014-15 : 28.03.2015

TEST REPORT ON SOLID CONCRETE BLOCKS

* Customer	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	: **Mr. R. Nagaraj,** No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.
* Name of the Work	: Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	: BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015
Sample Received on	: 24.03.2015
Date of Testing	: 28.03.2015
Size of Blocks	: 400mm x 200mm x 200mm
Cross Sectional Area	: 80000 mm^2
Technical Reference	: IS: 2185 (Part 1) - 2005
No. of Blocks Tested	: 08

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	35.20	258.5	3.23	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	34.69	259.6	3.25	
3	Block 3	35.21	260.2	3.25	
4	Block 4	36.32	261.1	3.26	
5	Block 5	35.21	262.2	3.28	
6	Block 6	36.30	263.1	3.29	
7	Block 7	35.26	260.8	3.26	
8	Block 8	36.20	259.9	3.25	

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-3/797e/Pre Cast Slab/2014-15 01.04.2015

TEST REPORT ON CONCRETE CORE (PRE CAST SLAB)

* Name of Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Name of Agency	:	**Mr. R. Nagaraj,** No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.
* Name of work	:	Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	:	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015
Techinical Reference	:	IS:516-1959 (Reaffirmed 2008), SP-24:1983.
Sample ID	:	Pre cast slab
Sample Received on	:	23.03.2015
Date of Testing	:	01.04.2015

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	77.00	0.379	2506.79	1.54	0.955	32.05	16.32	17.63	16.84	21.04
2	50.00	78.00	0.385	2513.83	1.56	0.960	32.40	16.50	17.82	17.11	21.39
3	50.00	79.00	0.395	2546.48	1.58	0.965	33.20	16.91	18.26	17.62	22.03

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-3/797e/CUBE/2014-15 29.04.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. R. Nagaraj,** No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.

*** Name of the work** : Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.

*** Reference** : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 01.04.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	01.04.2015	29.04.2015	8.159	350.5	15.58
2	01.04.2015	29.04.2015	8.250	369.6	16.43
3	01.04.2015	29.04.2015	8.300	378.6	16.83

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.14/RN/SDBC/Bit/2014-15 20.04.2015

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC:SP:-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. R. Nagaraj,** No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.
NAME OF THE WORK	Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015
SAMPLE I/D	Roads in Bhoomika Layout in Ward No.14, BBMP, Bangalore.
DATE OF TESTING	20.04.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25	25.50
7. Bitumen content in %	5.00	5.10
8. Average	**5.05**	

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Job No.: CTCE/BBMP/W.No.14/RN/SDBC/Bit/2014-15 20.04.2015

BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. R. Nagaraj,** No.4/13, Avalamma Choultry layout, Magadi Road, Bangalore – 560023.
NAME OF THE WORK	Improvements to roads and drains at Bhoomika Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 24.03.2015
SAMPLE I/D	Roads in Bhoomika Layout in Ward No.14, BBMP, Bangalore.
DATE OF TESTING	20.04.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.36	5.34	5.34	94.66	90-100
4.75	259.6	54.65	59.99	40.01	35-51
2.36	52.63	11.08	71.07	28.93	24-39
1.18	38.54	8.11	79.19	20.81	15-30
0.3	33.2	6.99	86.17	13.83	9-19
0.075	35.62	7.50	93.67	6.33	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	39.65	8.36	8.36	91.64	90-100
4.75	263.5	55.53	63.89	36.11	35-51
2.36	31.22	6.58	70.47	29.53	24-39
1.18	35.21	7.42	77.89	22.11	15-30
0.3	33.26	7.01	84.90	15.10	9-19
0.075	46.52	9.80	94.70	5.30	3-8

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